



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,332	05/09/2002	Robert Tjarnstrom	000500-335	6478
27045	7590	11/02/2005	EXAMINER	
ERICSSON INC. 6300 LEGACY DRIVE M/S EVR C11 PLANO, TX 75024			LI, AIMEE J	
			ART UNIT	PAPER NUMBER
			2183	

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/031,332	TJARNSTROM, ROBERT	
	Examiner	Art Unit	
	Aimee J. Li	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-3 and 6-14 have been considered. Claims 4-5 have been cancelled as per Applicant's request. Claims 1-3 and 6-14 have been amended as per Applicant's request.

Papers Submitted

2. It is hereby acknowledged that the following papers have been received and placed of record in the file: Amendment as filed 19 August 2005 and Extension of Time for 2 Months as received on 19 August 2005.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3 and 6-14 are rejected under 35 U.S.C. 102(e) as being taught by Looney, U.S. Patent Number 6,366,876 (herein referred to as Looney).

6. Referring to claim 1, Shuler has taught a processor architecture adapted to program languages operating with a sequential flow of instructions and handling data through use of simple values and lists and dynamically allocated arrays, and comprising

- a. An instruction holding means for holding instructions (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9),
- b. A data memory means for storing data objects (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9), and
- c. Execution means for executing an instruction (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9),
- d. Means for storing and handling argument values comprising simple values and references to data objects in dependence of an actual instruction from the instruction holding means, said dependence being called a binding (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9);

- e. Wherein said binding substituting a parameter reference in an actual instruction with an argument value and providing the actual instruction and the actual argument value to the execution means for executing said instruction (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9);
- f. Wherein said means for storing and handling is separate from said execution means and said instruction holding means (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9); and
- g. Means to increment reference counts to a data object and to decrement reference counts to a data object in dependence of an actual instruction from the instruction holding means (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9), and
- h. In dependence of the means, which handles simple values and references, storing a reference to said data object (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-

33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9).

7. Referring to claim 2, Looney has taught comprising

- a. Means for handling storage of simple data and references to data objects in the means, said stored data and references to data objects being referred to, by means of identifiers, from instructions from the instruction holding means (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9);
- b. Storage means in the means for handling storage of simple data and references to data objects (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9).

8. Referring to claim 3, Looney has taught wherein the means for handling the storage of values comprises a parameter memory means having means for keeping notice of the bindings to the stored values, and having storage means for storing the values (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9).

Art Unit: 2183

9. Referring to claim 6, Looney has taught wherein means in the parameter memory for storing and managing scope information for the stored parameters, where the scope information determines which parameters are currently valid and eligible to be read out from the storage (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9).

10. Referring to claim 7, Looney has taught wherein means in the parameter memory for storing and managing information for scope and values, where the means is used for storing and managing information for scope and data values, where the process information determines which scopes and values are currently valid and eligible to be read out from the storage (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9).

11. Referring to claim 8, Looney has taught a process identification register for identification of the currently executed process; a scope identification register for identification of the currently valid scope (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9).

Art Unit: 2183

12. Referring to claim 9, Looney has taught wherein at least the top of at least one priority queue of processes to be executed is kept available for reading, and that at least part of the process descriptor of the next process to be executed is kept available for reading (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9).

13. Referring to claim 10, Looney has taught wherein in order to make a process switch the means for handling values and references:

- a. Creates a new scope and at least the program counter is stored in the parameter memory using said new scope (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9);
- b. Stores said new scope value in the process descriptor of the current process, said process descriptor may be stored in the data memory (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9);

- c. Restores the scope value for the process switch from the process descriptor of said process (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9);
 - d. Sets the process switch to be the current process (Applicant's claim 10); and
 - e. Reads at least the program counter from the parameter memory and performs the restoring (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9).
14. Referring to claim 11, Looney has taught instructions having only one instruction format, where each instruction is composed of a distinct number of sub-instructions, each of which has in turn the same and only one format comprising a first part and a second part, the first part determining the action to take and the second part providing a value to use in that action (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9).
15. Referring to claim 12, Looney has taught adapted to execution of languages using functions and dynamic memory allocation comprising a set of instructions comprising dedicated instructions for making function calls, function returns, and parameter transfer between functions

Art Unit: 2183

(Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9).

16. Referring to claim 13, Looney has taught a set of instructions comprising dedicated instructions for incrementing or decrementing the number of references to data objects stored in the data memory (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9).

17. Referring to claim 14, Looney has taught wherein it is adapted to process parts of computer programs written in a functional language (Looney column 1, line 63 to column 2, line 35; column 3, lines 58-65; column 3, line 54 to column 4, line 20; column 5, lines 20-33; column 6, lines 32-61; column 8, lines 5-43; column 15, line 35 to column 16, line 10; column 17, line 48 to column 18, line 50; Figure 1; Figure 3; and Figure 9).

Response to Arguments

18. Examiner withdraws objections to the specification with regard to the sections of the specification in favor of the amendments. However, the title was not amended and the specification objection to the title is maintained.

19. Applicant's arguments with respect to claim 1-3 and 6-14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Art Unit: 2183

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as follows. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objections made. Applicant must also show how the amendments avoid such references and objections. See 37 CFR § 1.111(c).

- a. Evoy, U.S. Patent Number 5,937,193, has taught translation of instructions from one language into another while maintaining the parameters.

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

22. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

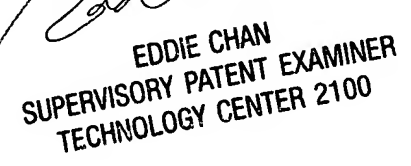
23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aimee J Li whose telephone number is (571) 272-4169. The examiner can normally be reached on M-T 7:30am-5:00pm.

Art Unit: 2183

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJL
Aimee J. Li
28 October 2005



EDDIE CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100